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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/402,721	12/28/1999	DIETER PELZ	202531	6319

7590 06/25/2002

LEYDIG VOIT & MAYER
TWO PRUDENTIAL PLAZA
180 NORTH STETSON
SUITE 4900
CHICAGO, IL 606016780

EXAMINER
SHERRER, CURTIS EDWARD

ART UNIT	PAPER NUMBER
1761	10

DATE MAILED: 06/25/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/402,721	Applicant(s) PELZ ET AL.	
	Examiner Curtis E. Sherrer	Art Unit 1761	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 April 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,7-18,20-22 and 24-42* is/are pending in the application.

4a) Of the above claim(s) *34 and 35* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-18,20-22,24-34 and 36-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☒ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

Claims 34 and 35 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected apparatus, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 9.

Applicant's election with traverse of the restriction in Paper No. 9 is acknowledged. The traversal is on the ground(s) that there is no burden on the examiner to search two separate inventions. This is not found persuasive because it would require the examiner to search two separate classes.

The requirement is still deemed proper and is therefore made FINAL.

This application contains claims 34 and 35, drawn to an invention nonelected with traverse in Paper No. 9. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Specification

This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

The incorporation of essential material in the specification by reference to a foreign application or patent, or to a publication is improper. Applicant is required to amend the disclosure to include the material incorporated by reference. The amendment must be accompanied by an affidavit or declaration executed by the applicant, or a practitioner representing the applicant, stating that the amendatory material consists of the same material

incorporated by reference in the referencing application. See *In re Hawkins*, 486 F.2d 569, 179 USPQ 157 (CCPA 1973); *In re Hawkins*, 486 F.2d 579, 179 USPQ 163 (CCPA 1973); and *In re Hawkins*, 486 F.2d 577, 179 USPQ 167 (CCPA 1973).

The amendment filed 12/20/99 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material that is not supported by the original disclosure is as follows: the amendments to the specification on pages 7, 8, 12, 13, 18, and 23.

Applicant is required to cancel the new matter in the reply to this Office action.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4, 5, 7-18, 20-22, 24-28 and 36-41 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The above claims rely on the term "about" to define numerical ranges. The term "about" in the claims is a relative term, which renders the claim indefinite. The term "about" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5, 7-15, 18, 20-22, 27, 28, 31, 33 and 37-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuji (Jap. Pat. No. 4267933) in view of applicants' admissions (pages 1-3 of instant application).

Fuji teaches the washing of a separation membrane using "an enzyme." "The enzyme is pref. a proteolytic enzyme and/or a cellulose-destroying enzyme." This quote teaches that one may use a cellulase alone, without a protease. The temperature and pH at which an enzyme function are notoriously well known result effective variables that those in the cleaning art typically optimize to obtain the most efficient use. Fuji does not teach the use of the enzyme cellulase to clean a membrane filter in the specific use of a beer membrane filter.

Applicants admit that "[t]o prolong the service life of the filter, the manufacturers recommend cleaning the used membranes . . . ." Applicants also discuss the well known filtration of beer. Therefore, applicants admit that it is notoriously well known to use enzymes for cleaning membrane filters. It would have been obvious to use the cellulase enzyme to clean a membrane filter that has been used to filter beer because, as admitted by applicants, it prolongs the life of the filter.

Applicants also admit that it notoriously well known to uses basic cleaners as a secondary cleaner after an enzyme cleaning. (Page 2, first full paragraph). In light of this admission, it

would be obvious to those of ordinary skill in the art to use the basic cleaners disclosed by applicants as a post-cleaning step in Fuji. Both KOH and NaOH are notoriously well known bases used for cleaning filters. The concentration of said bases are a result effective variable that is notoriously well known and optimized to obtain the best results.

Claim 4 is directed to a utilizing a cellulase that has a specific activity and the cited art is silent as to what specific cellulase to use. It is well known that an enzymes activity will affect its reactivity on substrates and therefore this is a parameter that those in the cleaning art would optimize to obtain the best results.

Claims 16-17, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuji in view of applicants' admissions and in further view of (pages 1-3 of instant application) and in further view of Ebara (JP Pat. No. 52122281).

Fuji in view of applicants' admissions teach that cited above, but they do not teach the use of an amylase to clean a filter. Ebara teaches the use of an enzyme, such as an amylase to wash impurities from a filter. The enzyme can also be used in conjunction with a washing agent. Ebara does not teach the use of the enzyme amylase to clean a membrane filter in the specific use of a beer membrane filter. It would have been obvious to use the amylase enzyme to clean a membrane filter that has been used to filter beer because it will remove impurities from the filter and thereby prolong the life of the filter.

As to the specific amylase, temperature and pH used to clean the filter, these are all notoriously well known to be result effective variables

Claims 26, 29, 30, 32 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuji in view of applicants' admissions and in further view of Bolay *et al.* (Jnl. of Colloid and Interface Sci.) instant application)(hereinafter Bolay).

The above claims are directed to measuring the streaming potential (zeta potential or streaming value) of the membrane to predict when the membrane will clog. Fuji in view of applicants' admissions teaches that cited above. They do discuss monitoring the streaming or zeta potential. Bolay teaches that the fouling of microfiltration membranes can be monitored by using streaming potential measurements. (See Abstract). Bolay found that electrostatic interactions between the proteins and the membrane indicate the degree of fouling. It would have been obvious to monitor the streaming potential during beer filtration as taught by Fuji in view of applicants' admissions because it provides an indication in the degree of fouling.

Applicants claim values where the filtration process should be halted so as to clean the filter and these values are considered to be values that those in the filtration art would optimize so as to reduce down time but obtain high throughput.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Curtis E. Sherrer whose telephone number is 703-308-3847. The examiner can normally be reached on Tuesday-Friday, 8AM-6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on 703-308-3959. The fax phone numbers for the

organization where this application or proceeding is assigned are 703-305-3602 for regular communications and 703-305-3602 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Curtis E. Sherrer
Primary Examiner
June 20, 2002